K Mayer

List of Publications by Year
in descending order

114 papers	5,042 citations	76326 40 h-index	98798 67 g-index
115 all docs	115 docs citations	115 times ranked	4001 citing authors

#	Article	IF	Citations
1	Reactive transport modelling the oxalate-carbonate pathway of the Iroko tree; Investigation of calcium and carbon sinks and sources. Geoderma, 2022, 410, 115665.	5.1	4
2	The nature of gas production patterns associated with methanol degradation in natural aquifer sediments: A microcosm study. Journal of Contaminant Hydrology, 2022, 247, 103988.	3.3	0
3	Travel time-based modelling of nitrate reduction in a fractured limestone aquifer by pyrite and iron carbonates under pore size limitation. Journal of Contaminant Hydrology, 2022, 248, 103983.	3.3	2
4	Reactive transport investigations of the long-term geochemical evolution of a multibarrier system including bentonite, low-alkali concrete and host rock. Applied Geochemistry, 2022, 143, 105385.	3.0	2
5	MIN3P-HPC: A High-Performance Unstructured Grid Code for Subsurface Flow and Reactive Transport Simulation. Mathematical Geosciences, 2021, 53, 517-550.	2.4	22
6	Impacts of water table fluctuations on actual and perceived natural source zone depletion rates. Journal of Contaminant Hydrology, 2021, 238, 103771.	3.3	15
7	Modeling of Thermal-Hydrological-Chemical (THC) Processes During Waste Rock Weathering Under Permafrost Conditions. Frontiers in Water, 2021, 3, .	2.3	7
8	Thermal-Hydrological-Chemical Modeling of a Covered Waste Rock Pile in a Permafrost Region. Minerals (Basel, Switzerland), 2021, 11, 565.	2.0	7
9	Investigating the Influence of Structure and Heterogeneity in Waste Rock Piles on Mass Loading Ratesâ€"A Reactive Transport Modeling Study. Frontiers in Water, 2021, 3, .	2.3	7
10	Spatiotemporal variability of fugitive gas migration emissions around a petroleum well. Atmospheric Pollution Research, 2021, 12, 101094.	3.8	12
11	Quantifying natural source zone depletion at petroleum hydrocarbon contaminated sites: A comparison of 14C methods. Journal of Contaminant Hydrology, 2021, 240, 103795.	3.3	4
12	Towards quantifying subsurface methane emissions from energy wells with integrity failure. Atmospheric Pollution Research, 2021, 12, 101223.	3.8	5
13	Persistence of Uranium in Old and Cold Subpermafrost Groundwater Indicated by Linking ^{234}U-^{235}U-^{238}U, Groundwater Ages, and Hydrogeochemistry. ACS Earth and Space Chemistry, 2021, 5, 3474-3487.	2.7	6
14	Geochemical and mineralogical assessment of reactivity in a full-scale heterogeneous waste-rock pile. Minerals Engineering, 2020, 145, 106089.	4.3	13
15	Controls of uncertainty in acid rock drainage predictions from waste rock piles examined through Monte-Carlo multicomponent reactive transport. Stochastic Environmental Research and Risk Assessment, 2020, 34, 219-233.	4.0	7
16	Release of geogenic uranium and arsenic results in water-quality impacts in a subarctic permafrost region of granitic and metamorphic geology. Journal of Geochemical Exploration, 2020, 217, 106607.	3.2	13
17	Scale dependence of effective geochemical rates in weathering mine waste rock. Journal of Contaminant Hydrology, 2020, 234, 103699.	3.3	16
18	Numerical Modeling of a Laboratory-Scale Waste Rock Pile Featuring an Engineered Cover System. Minerals (Basel, Switzerland), 2020, 10, 652.	2.0	12

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19	Geochemical Controls on Uranium Release from Neutral-pH Rock Drainage Produced by Weathering of Granite, Gneiss, and Schist. Minerals (Basel, Switzerland), 2020, 10, 1104.	2.0	8
20	Numerical investigation of flow instabilities using fully unstructured discretization for variably saturated flow problems. Advances in Water Resources, 2020, 143, 103673.	3.8	10
21	Hydro-biogeochemical impacts of fugitive methane on a shallow unconfined aquifer. Science of the Total Environment, 2019, 690, 1342-1354.	8.0	28
22	Reactive Transport of Manure–Derived Nitrogen in the Vadose Zone: Consideration of Macropore Connectivity to Subsurface Receptors. Vadose Zone Journal, 2019, 18, 1-18.	2.2	8
23	Mineralogical controls on drainage quality during the weathering of waste rock. Applied Geochemistry, 2019, 108, 104376.	3.0	13
24	Mobilization of Metal(oid) Oxyanions through Circumneutral Mine Waste-Rock Drainage. ACS Omega, 2019, 4, 10205-10215.	3.5	22
25	Barometric-pumping controls fugitive gas emissions from a vadose zone natural gas release. Scientific Reports, 2019, 9, 14080.	3.3	43
26	Tracking Diverse Minerals, Hungry Organisms, and Dangerous Contaminants Using Reactive Transport Models. Elements, 2019, 15, 81-86.	0.5	10
27	Laboratory-scale experimental and modelling investigations of 222Rn profiles in chemically heterogeneous LNAPL contaminated vadose zones. Science of the Total Environment, 2019, 681, 456-466.	8.0	15
28	Tracing Molybdenum Attenuation in Mining Environments Using Molybdenum Stable Isotopes. Environmental Science & Technology, 2019, 53, 5678-5686.	10.0	23
29	The Art of Reactive Transport Model Building. Elements, 2019, 15, 117-118.	0.5	12
30	Advancing knowledge of gas migration and fugitive gas from energy wells in northeast British Columbia, Canada. , 2019, 9, 134-151.		32
31	Reactive Transport in Evolving Porous Media. Reviews in Mineralogy and Geochemistry, 2019, 85, 197-238.	4.8	65
32	7. Reactive Transport in Evolving Porous Media. , 2019, , 197-238.		1
33	Poregas distributions in waste-rock piles affected by climate seasonality and physicochemical heterogeneity. Applied Geochemistry, 2019, 100, 305-315.	3.0	13
34	Identification, spatial extent and distribution of fugitive gas migration on the well pad scale. Science of the Total Environment, 2019, 652, 356-366.	8.0	37
35	Long-term monitoring of waste-rock weathering at the Antamina mine, Peru. Chemosphere, 2019, 215, 858-869.	8.2	46
36	High resolution spatial and temporal evolution of dissolved gases in groundwater during a controlled natural gas release experiment. Science of the Total Environment, 2018, 622-623, 1178-1192.	8.0	33

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37	Localized Sulfide Oxidation Limited by Oxygen Supply in a Full‐Scale Waste‐Rock Pile. Vadose Zone Journal, 2018, 17, 1-14.	2.2	18
38	Evaluation of the Potential for Dissolved Oxygen Ingress into Deep Sedimentary Basins during a Glaciation Event. Geofluids, 2018, 2018, 1-20.	0.7	5
39	Microbial and geochemical controls on waste rock weathering and drainage quality. Science of the Total Environment, 2018, 640-641, 1004-1014.	8.0	37
40	Evaluation of single- and dual-porosity models for reproducing the release of external and internal tracers from heterogeneous waste-rock piles. Journal of Contaminant Hydrology, 2018, 214, 65-74.	3.3	19
41	Stochastic multicomponent reactive transport analysis of low quality drainage release from waste rock piles: Controls of the spatial distribution of acid generating and neutralizing minerals. Journal of Contaminant Hydrology, 2017, 201, 30-38.	3.3	23
42	Changes in mineral reactivity driven by pore fluid mobility in partially wetted porous media. Chemical Geology, 2017, 463, 1-11.	3.3	32
43	A study of Zn and Mo attenuation by waste-rock mixing in neutral mine drainage using mixed-material field barrels and humidity cells. Applied Geochemistry, 2017, 84, 114-125.	3.0	14
44	Mobility and persistence of methane in groundwater in a controlled-release field experiment. Nature Geoscience, 2017, 10, 289-294.	12.9	106
45	Unintentional contaminant transfer from groundwater to the vadose zone during source zone remediation of volatile organic compounds. Journal of Contaminant Hydrology, 2017, 204, 1-10.	3.3	11
46	Diel plant water use and competitive soil cation exchange interact to enhance NH4 + and K+ availability in the rhizosphere. Plant and Soil, 2017, 414, 33-51.	3.7	15
47	Parallelization of MIN3P-THCm: A high performance computational framework for subsurface flow and reactive transport simulation. Environmental Modelling and Software, 2017, 95, 271-289.	4.5	28
48	Expanding the role of reactive transport models in critical zone processes. Earth-Science Reviews, 2017, 165, 280-301.	9.1	207
49	Spatial and Temporal Fluctuations of Pore‐Gas Composition in Sulfidic Mine Waste Rock. Vadose Zone Journal, 2016, 15, 1-13.	2.2	18
50	Determination of mineral dissolution regimes using flow-through time-resolved analysis (FT-TRA) and numerical simulation. Chemical Geology, 2016, 430, 1-12.	3.3	18
51	The impact of evolving mineral–water–gas interfacial areas on mineral–fluid reaction rates in unsaturated porous media. Chemical Geology, 2016, 421, 65-80.	3.3	43
52	Molybdenum and zinc stable isotope variation in mining waste rock drainage and waste rock at the Antamina mine, Peru. Science of the Total Environment, 2016, 550, 103-113.	8.0	44
53	Using noble gas tracers to constrain a groundwater flow model with recharge elevations: A novel approach for mountainous terrain. Water Resources Research, 2015, 51, 8094-8113.	4.2	12
54	Can argillaceous formations isolate nuclear waste? Insights from isotopic, noble gas, and geochemical profiles. Geofluids, 2015, 15, 381-386.	0.7	36

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55	Reactive transport benchmarks for subsurface environmental simulation. Computational Geosciences, 2015, 19, 439-443.	2.4	31
56	Benchmarks for multicomponent reactive transport across a cement/clay interface. Computational Geosciences, 2015, 19, 635-653.	2.4	43
57	A benchmark for multi-rate surface complexation and 1D dual-domain multi-component reactive transport of U(VI). Computational Geosciences, 2015, 19, 585-597.	2.4	8
58	Decalcification of cracked cement structures. Computational Geosciences, 2015, 19, 673-693.	2.4	13
59	A benchmark for microbially mediated chromium reduction under denitrifying conditions in a biostimulation column experiment. Computational Geosciences, 2015, 19, 479-496.	2.4	10
60	A reactive transport benchmark on modeling biogenic uraninite re-oxidation by Fe(III)-(hydr)oxides. Computational Geosciences, 2015, 19, 569-583.	2.4	5
61	Benchmarks for multicomponent diffusion and electrochemical migration. Computational Geosciences, 2015, 19, 523-533.	2.4	42
62	Benchmark problems for reactive transport modeling of the generation and attenuation of acid rock drainage. Computational Geosciences, 2015, 19, 599-611.	2.4	26
63	Measuring mineral dissolution kinetics using on-line flow-through time resolved analysis (FT-TRA): an exploratory study with forsterite. Chemical Geology, 2015, 413, 107-118.	3.3	12
64	Benchmark reactive transport simulations of a column experiment in compacted bentonite with multispecies diffusion and explicit treatment of electrostatic effects. Computational Geosciences, 2015, 19, 535-550.	2.4	45
65	Implementation and evaluation of permeability-porosity and tortuosity-porosity relationships linked to mineral dissolution-precipitation. Computational Geosciences, 2015, 19, 655-671.	2.4	60
66	Reactive transport codes for subsurface environmental simulation. Computational Geosciences, 2015, 19, 445-478.	2.4	566
67	Influence of surface passivation and water content on mineral reactions in unsaturated porous media: Implications for brucite carbonation and CO_2 sequestration. Geochimica Et Cosmochimica Acta, 2015, 148, 477-495.	3.9	94
68	Acidic Microenvironments in Waste Rock Characterized by Neutral Drainage: Bacteria–Mineral Interactions at Sulfide Surfaces. Minerals (Basel, Switzerland), 2014, 4, 170-190.	2.0	47
69	Reactive transport modeling of 90Sr sorption in reactive sandpacks. Journal of Hazardous Materials, 2014, 280, 685-695.	12.4	5
70	Comparison of unsaturated flow and solute transport through waste rock at two experimental scales using temporal moments and numerical modeling. Journal of Contaminant Hydrology, 2014, 171, 49-65.	3.3	28
71	Offsetting of CO_2 emissions by air capture in mine tailings at the Mount Keith Nickel Mine, Western Australia: Rates, controls and prospects for carbon neutral mining. International Journal of Greenhouse Gas Control, 2014, 25, 121-140.	4.6	113
72	Atmospheric noble gases as tracers of biogenic gas dynamics in a shallow unconfined aquifer. Geochimica Et Cosmochimica Acta, 2014, 128, 144-157.	3.9	13

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73	Evaluation of Seasonal Factors on Petroleum Hydrocarbon Vapor Biodegradation and Intrusion Potential in a Cold Climate. Ground Water Monitoring and Remediation, 2014, 34, 60-78.	0.8	23
74	Biogeochemical processes controlling the mobility of major ions and trace metals in aquitard sediments beneath an oil sand tailing pond: Laboratory studies and reactive transport modeling. Journal of Contaminant Hydrology, 2013, 151, 55-67.	3.3	17
75	Methane emissions and contaminant degradation rates at sites affected by accidental releases of denatured fuel-grade ethanol. Journal of Contaminant Hydrology, 2013, 151, 1-15.	3.3	48
76	Diffusion–reaction studies in low permeability shale using X-ray radiography with cesium. Applied Geochemistry, 2013, 39, 49-58.	3.0	10
77	Solubility controls for molybdenum in neutral rock drainage. Geochemistry: Exploration, Environment, Analysis, 2012, 12, 21-32.	0.9	24
78	Evaluating methods for quantifying cation exchange in mildly calcareous sediments in Northern Alberta. Applied Geochemistry, 2012, 27, 2511-2523.	3.0	11
79	Characterizing Vadose Zone Hydrocarbon Biodegradation Using Carbon Dioxide Effluxes, Isotopes, and Reactive Transport Modeling. Vadose Zone Journal, 2012, 11, vzj2011.0204.	2.2	45
80	Transport Implications Resulting from Internal Redistribution of Arsenic and Iron within Constructed Soil Aggregates. Environmental Science & Technology, 2011, 45, 582-588.	10.0	46
81	CO_2-Efflux Measurements for Evaluating Source Zone Natural Attenuation Rates in a Petroleum Hydrocarbon Contaminated Aquifer. Environmental Science & Technology, 2011, 45, 482-488.	10.0	69
82	Manganese and trace-metal mobility under reducing conditions following in situ oxidation of TCE by $KMnO_4$: A laboratory column experiment. Journal of Contaminant Hydrology, 2011, 119, 13-24.	3.3	13
83	Determination of spatially-resolved porosity, tracer distributions and diffusion coefficients in porous media using MRI measurements and numerical simulations. Journal of Contaminant Hydrology, 2011, 125, 47-56.	3.3	12
84	Solution of the MoMaS reactive transport benchmark with MIN3P–model formulation and simulation results. Computational Geosciences, 2010, 14, 405-419.	2.4	43
85	Comparison of numerical methods for simulating strongly nonlinear and heterogeneous reactive transport problems–the MoMaS benchmark case. Computational Geosciences, 2010, 14, 483-502.	2.4	50
86	Vadose zone attenuation of organic compounds at a crude oil spill site – Interactions between biogeochemical reactions and multicomponent gas transport. Journal of Contaminant Hydrology, 2010, 112, 15-29.	3.3	86
87	The importance of conceptual models in the reactive transport simulation of oxygen ingress in sparsely fractured crystalline rock. Journal of Contaminant Hydrology, 2010, 112, 64-76.	3.3	16
88	Manganese Valence in Oxides Formed from in Situ Chemical Oxidation of TCE by $KMnO_4$. Environmental Science & Technology, 2010, 44, 5934-5939.	10.0	21
89	Three-dimensional density-dependent flow and multicomponent reactive transport modeling of chlorinated solvent oxidation by potassium permanganate. Journal of Contaminant Hydrology, 2009, 106, 195-211.	3.3	57
90	A detailed field-based evaluation of naphthenic acid mobility in groundwater. Journal of Contaminant Hydrology, 2009, 108, 89-106.	3.3	36

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91	Aggregateâ€Scale Heterogeneity in Iron (Hydr)oxide Reductive Transformations. Vadose Zone Journal, 2009, 8, 1004-1012.	2.2	26
92	Identification of key parameters controlling dissolved oxygen migration and attenuation in fractured crystalline rocks. Journal of Contaminant Hydrology, 2008, 95, 141-153.	3.3	30
93	Modelling the biogeochemical cycle of silicon in soils: Application to a temperate forest ecosystem. Geochimica Et Cosmochimica Acta, 2008, 72, 741-758.	3.9	156
94	Modeling Vadose Zone Processes during Land Application of Foodâ€Processing Waste Water in California's Central Valley. Journal of Environmental Quality, 2008, 37, S43-57.	2.0	12
95	Transport and Reaction Processes Affecting the Attenuation of Landfill Gas in Cover Soils. Journal of Environmental Quality, 2008, 37, 459-468.	2.0	49
96	Reactive Transport Modeling of Trichloroethene Treatment with Declining Reactivity of Iron. Environmental Science & Technology, 2007, 41, 1432-1438.	10.0	66
97	Electrical Monitoring of In Situ Chemical Oxidation by Permanganate. Ground Water Monitoring and Remediation, 2007, 27, 77-84.	0.8	15
98	Investigating Ebullition in a Sand Column Using Dissolved Gas Analysis and Reactive Transport Modeling. Environmental Science & Technology, 2006, 40, 5361-5367.	10.0	51
99	Verification and intercomparison of reactive transport codes to describe root-uptake. Plant and Soil, 2006, 285, 305-321.	3.7	45
100	Process-based reactive transport modeling of a permeable reactive barrier for the treatment of mine drainage. Journal of Contaminant Hydrology, 2006, 85, 195-211.	3.3	64
101	Investigating the role of gas bubble formation and entrapment in contaminated aquifers: Reactive transport modelling. Journal of Contaminant Hydrology, 2006, 87, 123-154.	3.3	87
102	Integration of field measurements and reactive transport modelling to evaluate contaminant transport at a sulfide mine tailings impoundment. Journal of Contaminant Hydrology, 2006, 88, 1-22.	3.3	50
103	Metal mobility during in situ chemical oxidation of TCE by KMnO4. Journal of Contaminant Hydrology, 2006, 88, 137-152.	3.3	18
104	Reactive transport modeling in fractured rock: A state-of-the-science review. Earth-Science Reviews, 2005, 72, 189-227.	9.1	164
105	Use of dissolved and vapor-phase gases to investigate methanogenic degradation of petroleum hydrocarbon contamination in the subsurface. Water Resources Research, 2005, 41, .	4.2	99
106	Reactive Transport Modeling of Column Experiments for the Remediation of Acid Mine Drainage. Environmental Science & Technology, 2004, 38, 3131-3138.	10.0	50
107	Multicomponent reactive transport modeling of acid neutralization reactions in mine tailings. Water Resources Research, 2004, 40, .	4.2	34
108	Modeling Kinetic Processes Controlling Hydrogen and Acetate Concentrations in an Aquifer-Derived Microcosm. Environmental Science & Technology, 2003, 37, 3910-3919.	10.0	62

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109	Effectiveness of various cover scenarios on the rate of sulfide oxidation of mine tailings. Journal of Hydrology, 2003, 271, 171-187.	5.4	53
110	Multicomponent reactive transport modeling in variably saturated porous media using a generalized formulation for kinetically controlled reactions. Water Resources Research, 2002, 38, 13-1-13-21.	4.2	429
111	Rates of sulfate reduction and metal sulfide precipitation in a permeable reactive barrier. Applied Geochemistry, 2002, 17, 301-320.	3.0	136
112	Reactive transport modeling of an in situ reactive barrier for the treatment of hexavalent chromium and trichloroethylene in groundwater. Water Resources Research, 2001, 37, 3091-3103.	4.2	132
113	Modelling the closure-related geochemical evolution of groundwater at a former uranium mine. Journal of Contaminant Hydrology, 2001, 52, 109-135.	3.3	81
114	Reactive transport modeling of processes controlling the distribution and natural attenuation of phenolic compounds in a deep sandstone aquifer. Journal of Contaminant Hydrology, 2001, 53, 341-368.	3.3	86